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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,663	02/06/2002	Seung Keun Ahn	2950-206P	4625

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EXAMINER	
HUBER, PAUL W	

ART UNIT	PAPER NUMBER
2653	

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/066,663	AHN, SEUNG KEUN	
	Examiner	Art Unit	
	Paul Huber	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7-10 and 14* is/are rejected.

7)☒ Claim(s) *3-6 and 11-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Hayashiyama et al. (USP-6,014,094).

Regarding claims 1 and 8, Hayashiyama et al. discloses a method and apparatus of modulating a source data to be written onto an optical recording medium under the conditions of a given code rate and limited run length. "The main modulation code sequence and the sub-modulation code sequence, as shown in FIGS. 2(a) and 2(b), [are] produced by converting a sequence of digital data codes using two modulation tables under the DVD (Digital Video Disc) standards..." (col. 5, lines 36-40). Furthermore, "DSV control enable codes are provided by the main and sub-modulation tables which optimize a DSV of a finally outputted sequence of modulation codes .... Modulation codes other than the DSV control enable codes are provided by the main and sub-modulation tables so as to optimize maximum and minimum lengths between transitions" (col. 6, lines 12-19). Accordingly, Hayashiyama et al. discloses a modulator for modulating the source data based on a first mapping table and modulating the same source data based on a second mapping table, the first mapping table containing coded data corresponding to the source data, and the second mapping table containing at least one coded data capable of suppressing low frequency components as claimed. Hayashiyama et al. further discloses a controller (see data selector 24 of figure 1) for selecting one of the modulated data based on at least one among the conditions of the value of the source data, the time when low-frequency suppression has been conducted, the value of subsequent modulated data, and whether or not RLL constraints are violated as claimed.

Regarding claims 2, 9 and 10, Hayashiyama et al. discloses a DSV control system including a controller as claimed. The controller includes: a calculator 16 for calculating each digital sum value of the modulated data as

claimed; and a selector 24 for choosing one of the two data modulated according to the first and second mapping table in response to a control signal SB for suppressing low-frequency components. The DVD system further inherently includes a converter for converting the chosen modulated data (output) to channel data matching the optical recording medium, and a writing unit for recording the channel data onto the optical recording medium. See conventional DSV control system of figure 3, as referred by Hayashiyama et al. (col. 1, lines 10+) in reference to U.S. Patent No. 5,638,064, which patent more specifically teaches a channel converter and writing unit in reference to figure 12.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashiyama et al., as applied to the claims above, in further view of Mori et al. (USP-5,638,064) and Tran (USP-6,195,778).

Hayashiyama et al. discloses the invention as claimed, but fails to specifically teach a demodulator for demodulating a read channel data detected from the optical recording medium using a plurality of de-mapping tables in which a decoded data corresponding to the channel data is contained. Mori et al. and Tran, however, each disclose an apparatus for demodulating a channel data written onto an optical recording medium, in the same field of endeavor, for the purpose of enabling reproduction of the data recorded upon the recording medium. Hayashiyama et al. refers to Mori et al. in the "Background of Related Art" and in reference to figure 3 (prior art), and improves upon the modulation system as taught by Mori et al.. However, Mori et al. further discloses a demodulation system (see figure 14) for performing a reverse modulation operation thereby enabling reproduction of the data recorded upon the recording medium. Tran also teaches that with respect to DVD optical systems using multiple modulation tables, of the type as taught by Hayashiyama et al., "the modulation tables can be used in reverse" (see col. 3, lines 6+).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hayashiyama et al. such that the apparatus further includes a demodulator for demodulating the read channel data detected from the optical recording medium using a plurality of de-mapping tables in which a decoded data corresponding to the channel data is contained as taught by Mori et al. and Tran considered as a whole. A

practitioner in the art would have been motivated to do this for the purpose of performing a reverse modulation operation thereby enabling reproduction of the data recorded upon the recording medium.

Claims 3-6 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication should be directed to Paul Huber at telephone number 703-308-1549.

Paul Huber
Primary Examiner
Art Unit 2653